CLAIM AMENDMENTS

1. (Currently Amended) A distance measuring device comprising:

light emitting means that projects a beam of light onto an object to be measured;

light ~~receiving~~ detecting means that ~~receives~~ detects the light reflected ~~on~~ from the object, at a light ~~receiving~~ detecting position corresponding to ~~a~~ the distance to the object, and, based on the light ~~receiving~~ detecting position, outputs a long-range side signal that increases in value as the object is positioned ~~further~~ farther away from the distance measuring device at a certain intensity of the ~~received~~ detected light, and a short-range side signal that increases in value as the object is positioned closer to the distance measuring device at a certain intensity of the ~~received~~ detected light;

calculation means that calculates a ratio between ~~said~~ the short-range side signal and ~~said~~ the long-range side signal ~~to output~~ and outputs an output ratio signal;

luminance measuring means that measures ~~the~~ luminance of ~~an~~ outside light;

threshold setting means that adjusts an infinity determination threshold value such that ~~said~~ the infinity determination threshold value is set at ~~the~~ a value corresponding to ~~the further~~ a farther position as ~~the~~ lower luminance is measured by said luminance measuring means, ~~whereas said~~ and the infinity determination threshold value is set at ~~the~~ a value corresponding to ~~the~~ a closer position as ~~the~~ a higher luminance is measured by said luminance measuring means; and

conversion means that compares ~~said~~ the output ratio signal with ~~said~~ the infinity determination threshold value ~~so as~~ to determine whether the ~~value of said~~ output ratio signal corresponds to ~~the~~ a shorter range side rather than ~~the value~~ of ~~said~~ the infinity determination threshold value ~~or not, then in the former case~~ and, if so, converts ~~said~~ the output ratio signal into a distance signal using a predetermined conversion formula, and ~~in the latter case~~, if not, converts ~~said~~ the output ratio signal into a predetermined distance signal having a fixed value.

2. (Currently Amended) A distance measuring device comprising:

light emitting means that projects a beam of light onto an object to be measured;

light ~~receiving~~ detecting means that ~~receives~~ detects the light reflected ~~on~~ from the object, at a light ~~receiving~~ detecting position corresponding to ~~a~~ the distance to the object, and, based on the light ~~receiving~~ detecting position, outputs a long-range side signal that increases in value as the object is positioned ~~further~~ farther away from the distance measuring device at a certain intensity of the ~~received~~ detected light, and a short-range side signal that

increases in value as the object is positioned closer to the distance measuring device at a certain intensity of the ~~received~~ detected light;

clamping means that compares ~~said~~ the long-range side signal with a clamp signal, and, when ~~said~~ the long-range side signal is larger than ~~said~~ the clamp signal ~~in value~~, outputs ~~said~~ the long-range side signal~~;~~, and, when ~~said~~ the long-range side signal is smaller than ~~said~~ the clamp signal ~~in value~~, outputs ~~said~~ the clamp signal;

calculation means that calculates a ratio between ~~said~~ the short-range side signal and a signal output from said clamping means ~~to output~~ and outputs an output ratio signal;

luminance measuring means that measures ~~the~~ luminance of ~~an~~ outside light;

threshold setting means that adjusts an infinity determination threshold value such that ~~said~~ the infinity determination threshold value is set at ~~the~~ a value corresponding to ~~the further~~ a farther position as ~~the~~ lower luminance is measured by said luminance measuring means, ~~whereas said~~ and the infinity determination threshold value is set at ~~the~~ a value corresponding to ~~the~~ a closer position as ~~the~~ a higher luminance is measured by said luminance measuring means; and

conversion means that compares ~~said~~ the output ratio signal with ~~said~~ the infinity determination threshold value ~~so as~~ to determine whether the ~~value of said~~ output ratio signal corresponds to ~~the~~ a shorter range side rather than ~~the value~~ of ~~said~~ the infinity determination threshold value ~~or not, then in the former case~~ and, if so, converts ~~said~~ the output ratio signal into a distance signal using a predetermined conversion formula, and ~~in the latter case~~, if not, converts ~~said~~ the output ratio signal into a predetermined distance signal having a fixed value.

3. (Currently Amended) The distance measuring device according to claim 1 wherein, when the luminance of the outside light measured by said luminance measuring means is lower than a predetermined first luminance level, said threshold setting means sets ~~up~~ the infinity determination threshold value at a first level value~~;~~, and when the luminance of the outside light is higher than ~~said~~ the first luminance level, sets ~~up~~ the ~~same~~ infinity determination threshold level at a second level value corresponding to ~~the~~ a position that is closer to said distance measuring device than the position associated with the first level value.

4. (Currently Amended) The distance measuring device according to claim 2 wherein ~~in case~~, when the value of ~~said~~ the output ratio signal corresponds to ~~the~~ a shorter range side than the value of ~~said~~ the infinity determination threshold value, said conversion means,

when the value of ~~said~~ the output ratio signal corresponds to ~~the~~ a shorter range side than the value of a clamping effect determination reference level, converts ~~said~~ the output ratio signal into the distance signal using a first conversion formula,

when the value of ~~said~~ the output ratio signal corresponds to ~~the~~ a longer range side than the value of ~~said~~ the clamping effect determination reference level and the luminance of the outside light measured by said luminance measuring means is higher than a predetermined second luminance level, converts ~~said~~ the output ratio signal into the distance signal using ~~said~~ the first conversion formula, and

when the value of ~~said~~ the output ratio signal corresponds to the longer range side than the value of ~~said~~ the clamping effect determination reference level and the luminance of the outside light measured by said luminance measuring means is lower than the second luminance level, converts ~~said~~ the output ratio signal into the distance signal using a second conversion formula, ~~and~~ wherein ~~said~~ the first conversion formula converts ~~said~~ the output ratio signal into a distance signal corresponding to the ~~further~~ farther position from said distance measuring device than ~~said~~ does the second conversion formula ~~does~~.

5. (Currently Amended) The distance measuring device according to claim 4, wherein ~~said~~ the clamping effect determination reference level is defined by using ~~the~~ an object with a standard reflectance.

6. (Currently Amended) The distance measuring device according to claim 5, wherein ~~said~~ the reflectance is 36%.